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ABSTRACT

This report provides Pennsylvania state legislators and educators with policy-relevant information about the distance learning needs of rural Pennsylvania school districts. Two surveys, covering rural and urban-suburban Pennsylvania school districts, examined distance learning programs and technologies currently being used and the possibility of creating rural-urban distance learning partnerships. In addition, 29 state departments of education provided information on their states' distance education practices, and relevant areas of the Pennsylvania School Code were examined to determine the impact of state policies on development of distance learning. While the majority of rural school districts used distance learning programs in foreign languages and higher mathematics, many districts indicated needs for distance programs in those areas, as well as in the sciences, gifted education, and advanced placement study. Rural administrators indicated that their greatest need was financial aid, followed by faculty training, technical assistance, administrator training, and facility changes. Most administrators wanted to use noncertified personnel as classroom facilitators, which is current practice in 26 of the 29 states surveyed but forbidden by Pennsylvania state policy. This report includes recommendations that fall into four distinct categories: state government, the state department of education, organizations critical to programming delivery, and rural school issues. Appendices describe programming resources related to audiographics, cable television, computer on-line information networks, foundation-supported programming, instructional support centers, public television, satellite programs, software, videocassettes, and consultants; and funding resources from corporations and governmert agencies. (SV)

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ED 373 946

THE CENTER FOR
RURAL PENNSYLVANIA

SERIES FOR RURAL REVITALIZATION SERIES VOLUME 2 NUMBER 1

TELETEACHING

DISTANCE EDUCATION

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TELETEACHING DISTANCE EDUCATION

CENTER FOR RURAL PENNSYLVANIA
JANUARY 1994

This report is drawn from the research work conducted by the Rural Services Institute of Mansfield University and EPLER ENTERPRISES, Inc. The principal investigator was Dr. Jesus Lucero, assisted by Doris Epler. The primary outcome was to determine the need, availability, and use of distance learning by rural school districts, universities, businesses, and government. Research included an inventory of the technologies and programs currently being used by rural school districts. Their availability and use were assessed along with the district's interest in implementing additional or new distance learning programming. Funding sources and programmatic services were researched and identified. Because this topic encompasses so many different aspects, this report and its recommendations are intended for many audiences — state government, Pennsylvania Department of Education, organizations critical to delivery of programming, and the Pennsylvania school districts. A copy of the full report and appendices may be obtained by contacting the Center for Rural Pennsylvania.

Teleteaching Distance Education

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INTRODUCTION

Students who attend small rural schools may not have the same educational opportunities as those provided to students who attend urban and suburban school districts. Often being denied access to courses that would enhance their educational programs, students from small rural schools may enter higher education at a distinct disadvantage. The courses that these students may have difficulty in obtaining are foreign languages, higher-level mathematics, the sciences, and other courses or programs such as gifted, that differentiate themselves from traditional core courses. The reasons for this deficiency are many. They range from lack of qualified teaching staff, difficulties in attracting staff to rural areas, maintaining and upgrading teacher skills, and a lack of funds to hire a qualified teacher for a limited number of students needing or requesting a particular class.

Our world is one of increasingly rapid social and technological change. We can no longer afford to ignore the educational needs of our rural students. Technology has the power to enable the incorporation of necessary courses into rural schools, thereby helping rural students have access to a more equitable education and thus compete in society on an equal basis. The needs for distance learning of Pennsylvania rural schools, and the associated problems and concerns that come with the implementation of the technology, need to be identified. In addition, state policies and regulations regarding the delivery of distance learning courses to rural students also need to be examined.

Current technology permits school districts to share distance learning personnel and programs. However, access to distance learning is only meaningful if administrators and teachers understand its implications. Therefore, the pedagogical and administrative needs involving the delivery and implementation of distance learning also needs to be identified.

This study examined the distance learning needs, current use and availability of distance learning, providers of distance learning, and also educational and governmental organizations. Particular consideration was given to the areas of higher mathematics, science, foreign languages, gifted, and special needs. This study also examined what partnership agreements exist in Pennsylvania, as well as the perceived need to create new ones that could be beneficial to all parties involved. A special emphasis was placed on the identification of factors that could enhance or inhibit the use of distance learning in rural schools.

Studies, position statements, and viewpoints from the Public Broadcasting System, cable television, commercial television, Pennsylvania Telephone Association, and other pertinent providers and educational organizations were considered. This study provides legislators and educators with information that may help them make appropriate decisions to help satisfy rural school districts' needs for distance learning, allowing these districts to close the educational equity gap between themselves and their counterparts in urban/suburban areas.

PROCEDURES

The research process began with a literature search of public information on distance learning funding and programming. Two guides were developed from this information (*Distance Learning Funding Sources* and *Distance Learning Programming*), and were made available to school districts to use for activities and equipment.

Surveys were developed and administered to two groups: rural school districts and urban/suburban school districts. The rural school district survey examined what distance learning programs and technologies rural schools were currently using, what programs they would like to begin, and the interest in becoming part of a partnership with other school districts. The urban/suburban school district survey identified the distance learning programs and technologies being used and whether these districts were interested in developing distance learning partnerships with rural school districts.

Regional informational meetings were held at nine sites throughout Pennsylvania to explain the survey questions and to allow input from school administrators. Even though these meetings were sparsely attended, information was shared ranging from the types of technology and programs that are currently being used to questions on how to begin distance education programs and the possibility of establishing partnerships.

An examination of the five-year plans that were submitted by rural school districts to the Pennsylvania Department of Education (PDE) was conducted to determine whether districts were considering getting involved in distance learning activities for either their students or teachers sometime in the near future.

A review of Chapter 3 (School Profiles), Chapter 5 (Curriculum Regulations), Chapter 6 (Vocational Education), and Chapter 49 (Teacher Certification) of the Pennsylvania School Code was completed to determine what impact the codes would have on the development, implementation, and evaluation of distance learning, as well as what codes would possibly inhibit these activities.

Forty-two national and state education agencies were asked to submit copies of their position papers on distance education—only a few actually had formal position papers. A comparison of these papers was made to determine common aspects or conflicting positions. Several agencies indicated they supported distance learning education even though they did not have formal position papers, while others indicated they may be developing a position paper on distance learning in the future.

To determine the status of distance learning nationally, 34 states were randomly selected to receive a short survey of five questions. Twenty-nine states responded. Information was requested on certification requirements, role of noncertified personnel, line item appropriation, percentage of satellite dishes to school buildings, and the top providers of distance learning programs.

The Pennsylvania Department of Education annually issues Request for Applications (RFA) for school districts to apply for funding to become involved in distance education. The requirements and criteria contained in the 1991-92 RFA and those in the 1992-93 RFA were compared and contrasted.

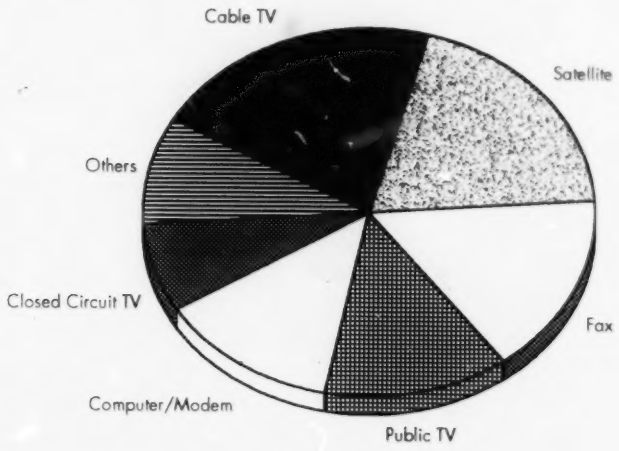
Two presentations regarding the process involved and the preliminary findings of this study were made. The first presentation was made to the combined conference of the Pennsylvania Association of Supervision and Curriculum Development (PASCD) and the Pennsylvania Association of Educational Communications Technology (PAECT); the second, to the Political and Legislative Strategy Group of the Pennsylvania State Education Association (PSEA). Seventeen people attended the first session; all 17 held membership in PAECT and 4 also held membership in PASCD. Twenty-two people, all PSEA members, attended the second session. Comments from those attending were collected and summarized.

RESULTS

Findings From The Two Surveys

For both the rural and the urban/suburban school districts, satellite, cable, and public television are the major distance learning technologies being used, and Satellite Educational Resources Consortium (SERC) is the major satellite distance learning provider (see Fig. 1). There are 306 rural school districts currently participating in the resource-sharing program, ACCESS PENNSYLVANIA. In addition, 84 rural school districts are providing on-line database searching services for students and teachers under the LIN-TEL program. Rural schools are also receiving distance learning courses from Oklahoma State University (OSU), the Riverview Teleteaching Project, local consortia, and a smattering of other vendors. Eighty-eight percent of rural school districts were interested in forming partnerships and were willing to share distance learning technologies with the community, state agencies, and/or with other school districts.

Figure 1 Technologies Used by School Districts for Distance Learning
(N = 76)



Urban/suburban schools do not use distance learning as much as rural schools, but they indicated a willingness to form partnerships with rural schools to assist them in the delivery of distance learning programs. Some of the needs of rurals could possibly be addressed by the formation of partnerships between rural schools and urban/suburban schools. Facilitation will be necessary to bring interested parties together.

While 112 responses indicated participation in some form of distance learning, the majority of rural school districts use programs in foreign language and higher mathematics. The largest enrollment, 23 students, is in Japanese.

In addition, 307 rural responses indicated a need to participate in distance learning in the areas of higher mathematics (63 respondents), foreign languages (94 respondents), the sciences (51 respondents), gifted (23 respondents), advanced placement (27 respondents), elementary programs (18 respondents), special needs (13 respondents), and a variety of other courses (18 respondents). If one assumes that in each class requested there would be a minimum of three students, there could be at least 1,020 rural students who could benefit by participation in distance learning who are presently being denied that opportunity.

Findings From the Examination of the Five-Year Plans

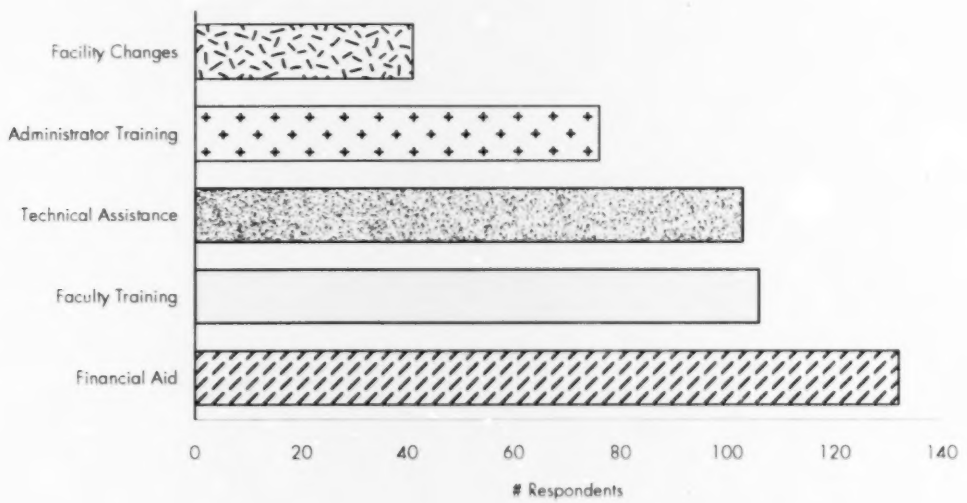
The information gathered from the current five-year plans and membership lists of ACCESS PENNSYLVANIA, LINTEL, the Pennsylvania Public Television Network, various vendors, and other sources demonstrated that most school districts are willing to use technology within the teaching/learning process. However, from reviewing the long-range plans and conducting telephone interviews with many superintendents and principals, the barriers that stand in the way of implementing technology were also recognized. Rural school districts have indicated that technology can help to expand curricular offerings and increase access to resources for their students and teachers, but progress in this direction has been extremely slow.

Findings From the Examination of the School Code

The examination of the School Code indicated that while distance learning is not recognized as such, no mandates prevent its implementation. Rural school administrators feel the mandate requiring a certificated teacher serve as the distance learning classroom facilitator prevents participation by students since their staffs are sparse and they do not have certificated teachers to use. Overall, most administrators said they would like to be able to use non-certified staff as classroom facilitators.

Figure 2 Assistance Needed for Distance Learning Programs

(N = 145. Respondent Could Choose More Than One Type of Assistance)



In order to participate in distance learning more fully, rural school administrators indicated a need for assistance in five major areas: (1) financial aid, (2) training for faculty, (3) technical assistance, (4) training for administrators, and (5) facility renovations (see Fig. 2). Ninety-one percent of the respondents indicated a need for financial assistance in order to become involved in distance learning. Rural school administrators also indicated they need assistance in the areas of faculty training and technical assistance. The need for distance learning has been substantiated, but at the same time the problems identified above are preventing its more rapid implementation.

Findings From Interviews With State Agencies

Most of the twelve state departments interviewed would like to investigate the use of distance learning for training and education in their agencies but voiced concerns regarding the cost of using distance learning technologies.

They see a need for more training for their people regarding the technologies involved and how distance learning can help them accomplish their mission. They would like to see more state funding allotted to this area.

Findings From Regional Meetings With School Administrators

Participants at the regional meetings were particularly interested in where and how to get the funding necessary to become involved in distance learning, the problem of the requirement for a certified teacher in a distance learning classroom when there were one to three students participating in a course, vendors who were offering distance learning services, and the costs involved.

Findings From the Examination of the Position Papers of Various Organizations

The distance learning policy statements examined contained no conflicting statements. From the analysis of the eight position papers submitted by the organizations contacted, the policy statements of the National Education Association (NEA), the American Federation of Teachers (AFT), and the Council of Chief State School Officers (CCSSO) were the most comprehensive and well-developed. It appears these three educational leadership organizations understand many of the ramifications of distance learning. State and local educational agencies should be encouraged to examine the distance learning policy statements of NEA, AFT, and CCSSO when developing distance learning policies or implementing distance learning in the K-12 environment.

The National Educational Association (NEA) has recommended that states develop specific policies for licensing teachers involved in distance education. In addition, NEA also encourages local school districts to develop standards and policies regarding classroom facilitators.

Findings From Interviews With Other States and Major Providers

While most states prefer to have a certified teacher in the distance learning classroom with students, noncertified people, such as teacher aides, are permitted to be with the students. The majority of states indicated that the aides must be adults employed by the school district (see Chart A). Several states indicated that when the distance learning program is only short-term, certification requirements do not apply. In North Dakota, distance learning certification is only valid for a two-year period.

Oklahoma State University (OSU) uses all certified teachers in the area of instruction. States who use their services accept the Oklahoma certification. Interactive fiber-optic projects have a certified teacher from the sending school while satellite instructors may not be certified teachers.

The Virgin Islands use librarians who hold masters' degrees in Library Science (MLS) to handle the technical aspects in coordination with the local public television station or in some instances, with the local cable stations. The Virgin Islands Department of Education has just been awarded a cable channel for educational broadcasting, and it is trying to make sure all schools have working cable television work stations.

TI-IN Network, the only national network to seek to license its teachers in the states to which it broadcasts its courses, identified 18 states that require distance learning teachers be licensed/certified only in the state in which the programming originates. These states include Arkansas, Florida, Idaho, Illinois, Indiana, Kansas, Louisiana, Maryland, Minnesota, New Hampshire, North Dakota, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Utah, and Vermont. In addition, Florida, Oklahoma, and Oregon approve the curriculum, not the teachers (see Chart A).

SERC, which broadcasts in 23 states, formed an agreement with the CCSSO to recognize the credentials of the educators that the network uses. The Massachusetts Corporation for Educational Telecommunications (MCET) uses both certified and noncertified instructors, depending upon the subject being addressed.

CHART A

STATE POLICIES ON TEACHER CERTIFICATION AND

	Where Must the Teleteacher Be Certified?	Can Noncertified Persons Serve as Distance Learning Facilitators?
Alabama	In-State	Yes
Connecticut	In-State	No
Florida	Program's Originating State	Yes
Georgia	Program's Originating State	Yes
Hawaii	In-State	Yes
Illinois	Program's Originating State	Yes
Indiana	No Policies	N/A
Iowa	In-State	Yes
Kentucky	Program's Originating State	Yes
Maine	Program's Originating State	Yes
Maryland	Program's Originating State	Yes
Minnesota	Program's Originating State	Yes
Nevada	In-State	No
New Hampshire	Program's Originating State	Yes

FINDINGS FROM PRESENTATION OF INTERIM DATA

The individuals who reacted to the interim data considered trying to get around the time factor as the greatest impediment to using distance learning provided by out-of-state vendors. In some cases, the student had to lose time in two in-house courses in order to participate in one distance learning program. In fact, two people indicated their schools had started to participate in distance learning, but withdrew because it was too hard for the students to straddle two courses and still keep up with their distance learning studies. Some participants identified another hindrance to distance learning in that commercial vendors require students to sign up for a course for the whole year or a full semester. In some cases, full participation may not be necessary and, therefore, vendors should offer partial participation with appropriate fees to support less-than-full participation.

Some participants felt the results, that indicated what courses were being taken by the students, might be skewed by the limited number of programs vendors are currently offering. Math and science may have been chosen by students more often since they can use these courses for advanced placement credits. In addition, some funding sources are targeted for these subject areas. Participants cited a need for a broader selection of distance learning courses for students. They felt the surveys indicated a low need for training since vendors, such as SERC, provided excellent in-service programs and relatively easy-to-use products.

Participants also indicated they felt the Department of Education should not require a certified teacher in distance learning classrooms, particularly when the number of students taking a course is low. Several people referred to other states that are apparently obtaining good results when noncertified people serve as distance learning facilitators.

Classroom Facilitating For Distance Learning

	Where Must the Teleteacher Be Certified?	Can Noncertified Persons Serve as Distance Learning Facilitators?
New Mexico	In-State	Yes
New York	Program's Originating State	Yes
North Carolina	In-State	Yes
North Dakota	In-State	Yes
Ohio	Program's Originating State	Yes
Oklahoma	Program's Originating State	Yes
Pennsylvania	Program's Originating State	No
South Carolina	Program's Originating State	Yes
South Dakota	Program's Originating State	No
Texas	In-State	Yes
Utah	No Policies	Yes
Vermont	N/A	Yes
Washington	Program's Originating State	Yes
West Virginia	In-State	Yes
Wisconsin	In-State	Yes

Major Sources of Funding and/or Resources

Rural school administrators perceived cost as the major factor inhibiting or restricting the level of their involvement in distance learning. Presently, there are six major sources of funding for distance learning: (1) the federal government, especially the STAR SCHOOLS grants; (2) the state government; (3) local school district funding; (4) business and industry; (5) private foundations; and (6) a mix of the above.

Federal Government

The focus of STAR SCHOOLS grants is to assist consortia-type efforts that benefit large geographic areas. Pennsylvania, with its involvement with SERC, has benefitted from these funds. Schools have been able to purchase satellite and playback equipment at reduced costs and hundreds of students have been able to take distance learning courses for the past five years. Research for Better Schools, Inc., located in Philadelphia, one of the National Educational Research and Development Centers provides information about its findings to parents, instructors, and other professionals who use the data for educational purposes. The U.S. Department of Education conducts the Education Partnerships Program, School Improvement Programs, and School, College, and University Partnerships that assist schools in forming partnerships in distance learning. The National Science Foundation and the National Telecommunications Facilities Program are agencies that award grants that can be used for distance learning. NASA (National Aeronautics and Space Administration) publishes a catalog that lists privately produced videodiscs and software on astronomy and space exploration. NASA Spacelink is a free service database that provides information and educational materials.

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State Government

In fiscal years 1991-92, 1992-93, and 1993-94, the state provided the Pennsylvania Department of Education (PDE) with a line item in the budget for distance learning. Funding in the amount of $350,000, $300,000, and $338,000, respectively was approved for each year. PDE receives proposals and makes grants to schools to participate in distance learning projects.

Local Government

Many rural schools are located in economically depressed areas. While many rural school administrators are participating in distance learning by using local funds, there are many unmet distance learning needs in rural schools that cannot be addressed by relying on local funding. Some administrators have recommended the state provide low-cost loans to schools interested in purchasing distance learning equipment, while other administrators would like to see direct grants made for this purpose.

Business and Industry

A small number of rural school districts have formed partnerships with businesses and industries to offset the costs involved in implementing distance learning programs. Many of these businesses and industries also have grant programs that may be available for distance learning.

Private Foundations

Rural school districts have sought funding from private foundations only to realize that while rural schools need the money for the programs, they often do not have an available staff member who has the time or the expertise to write the grant. Grant writing assistance may be available through the local intermediate units or private consultants.

A Mix of The Above

Local satellite companies, business, industry, cable companies, telephone companies, private foundations, and local school districts need to band together to develop distance learning programs that address the needs of rural students and teachers. In many cases when such partnerships are formed, federal and state monies are easier to obtain because the community has demonstrated a strong commitment for the program.

CONCLUSIONS

OBJECTIVE 1: *To determine the need of Pennsylvania's rural school districts for distance learning programs in foreign languages, mathematics, the sciences, and other subjects, as well as those needed for the gifted.*

Many rural schools still need access to distance learning courses, particularly in the areas of statistics, Russian, Japanese, German, the sciences, biology, and environmental studies.

Rural schools have a need for more distance learning courses for their gifted and advanced placement students. Courses identified include languages, mathematics, and college credit for the gifted. Rural schools also have an interest in obtaining advanced placement distance learning courses in calculus and higher mathematics, physics, chemistry, English, and composition. Rural schools are demonstrating an increased interest in providing elementary students with distance learning courses in languages.

OBJECTIVE 2: *To inventory and describe the distance learning programs available for use in Pennsylvania's rural schools through local school districts, the Pennsylvania Department of Education, the federal government, private companies, and nonprofit organizations; to identify the technologies needed to use these programs as well as the cost involved; and to determine reciprocal certification limitations relating to these programs.*

Rural schools are in need of more information about distance learning programs, the technologies involved, and the associated costs. To address this need, an extensive inventory was completed of the distance learning programs currently available to Pennsylvania's rural schools. The inventory revealed that most of the courses desired by rural schools are available through a variety of vendors.

Rural schools need assistance to pay the costs involved in installing equipment and implementing distance learning courses. To provide some assistance in this area, a guide which indicates the information needed by rural schools regarding what distance learning programs are available, what equipment is needed, and the costs involved was produced and disseminated. Reciprocity is currently not a problem for Pennsylvania rural schools. Current policies permit schools to use distance learning programs by accepting the certification of the teacher from the originating site.

OBJECTIVE 3: *To inventory distance learning programs currently being used by Pennsylvania's schools and to compare the level of use with the need.*

Most rural schools currently providing students with distance learning courses are focusing on mathematics, foreign languages, the sciences, economics, and world geography. However, many of these schools need more programs to address the needs of other students for distance learning courses. Based on the responses to this study, there could be at least 1,020 rural students who could benefit by participation in distance learning but are presently being denied that opportunity.

Rural schools may fall even further behind their wealthier counterparts if their needs for distance learning are not met. The involvement of rural schools in distance learning in Pennsylvania would increase dramatically with the adoption of a comprehensive statewide plan that addresses their unique needs. Rural schools must have people on the staff who are knowledgeable about distance learning and have the time to assist teachers to use the technologies properly.

A distance learning needs assessment must be conducted among the teachers and students of rural school districts to determine what is needed to enhance the teaching/learning environment. Rural school districts would benefit by having access to additional staff members within the Pennsylvania Department of Education who are knowledgeable about all facets of distance learning.

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Objective 4: *To document positions held by educational agencies and organizations on distance learning, including but not limited to the Pennsylvania Department of Education, the Pennsylvania State Education Association, the Pennsylvania Association of Rural & Small Schools, the National Education Association, the Parent Teacher Association, and the Federal Department of Education.*

Most educational agencies and organizations on distance learning do not currently have formal position papers on distance learning. However, several educational agencies have indicated that they plan to develop distance learning position papers in the near future.

Objective 5: *To determine how state policy can help satisfy rural school districts' need for distance learning in foreign languages, mathematics, the sciences, and other subjects not presently being met by existing programs.*

Rural schools have expressed an interest in obtaining relief from the mandate that requires a certificated teacher in classrooms with small numbers of students.

States using a noncertificated person as the distance learning classroom facilitator (26 of 29 states responding to the survey) indicated they have not experienced any significant problems by using an employee in this capacity. Pennsylvania can expect increased pressure from rural schools to obtain relief from this mandate.

National, state, and local teacher organizations are concerned about how the use of distance learning in rural schools will affect job security. As new educational regulations and guidelines are developed, care must be exercised to take into consideration the unique characteristics and needs of distance learning.

Objective 6: *Identify sources of funding and/or resources that may assist rural schools in implementing distance learning programs in foreign languages, mathematics, the sciences, and other subjects/programs.*

Since the cost of distance learning was identified as a major inhibiting factor when implementing distance learning programs, a guide which identifies possible funding sources that rural schools might use was prepared and disseminated to rural schools.

The Pennsylvania State Legislature should increase the current line-item in the state budget for the Department of Education to provide more rural schools the opportunity to participate in distance learning activities. Partnerships should be formed to help rural schools fund the acquisition of equipment, to offset registration fees, and/or to share instructors between school districts. Rural school districts must use creative financing mechanisms to help support the use of distance learning.

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RECOMMENDATIONS

An examination of the research completed as a result of this study resulted in sixteen key recommendations. It was determined that the recommendations fell into four distinct categories: (1) state government issues; (2) Pennsylvania Department of Education issues; (3) organizations critical to the delivery of programming; and (4) rural school district issues.

State Government

Recommendation 1. Funds should be provided by the state government to develop a statewide plan to address the needs of all of Pennsylvania's residents for distance leaming.

Recommendation 2. Funds should be made available to the Pennsylvania Department of Education to provide additional staff needed to assist educators to implement distance learning effectively.

Recommendation 3. Legislators should make distance learning a priority and increase the line item for distance learning to $1,000,000 so the Pennsylvania Department o. Education can fund the distance learning programs that respond to the needs of rural students and teachers.

Recommendation 4. Regulations should be provided that will allow schools to access all types of telecommunications on a more cost-effective basis.

Recommendation 5. The Center for Rural Pennsylvania should make the results of this study available to schools and to other states interested in the results.

Pennsylvania Department of Education

Recommendation 6. The Pennsylvania Department of Education should assist schools in conductng needs assessments and developing long-range plans for the integration of distance learning into their curriculum.

Recommendation 7. A central resource center, located within the Department of Education, should be established. This resource center could be funded by the implementation of a formula that would require other agencies to provide a proportionate share of the money to get the distance learning services and training they need.

Recommendation 8. Noncertified school personnel should be permitted to serve as distance learning classroom facilitators.

Recommendation 9. Chapter 49 should include language that recognizes the importance of teachers learning how to use various technologies, with a particular emphasis on distance learning.

RECOMMENDATION 10. Chapter 49 should include the requirement for administrators to complete courses for the management of educational technology and the school library media center.

RECOMMENDATION 11. The Pennsylvania Department of Education should monitor the distance learning programs it funds, evaluate the results, and disseminate information about successful programs so others may adopt or adapt proven strategies.

RECOMMENDATION 12. The Pennsylvania Department of Education and institutions of higher education should conduct research that focuses on the impact that distance learning has on student achievement and teacher professional development, student and teacher attitudes about learning, student retention, and the effect that expanded course offerings via distance learning has on career and educational choices made by Pennsylvania students.

ORGANIZATIONS CRITICAL TO PROGRAMMING DELIVERY

RECOMMENDATION 13. Cable companies, telephone companies, and satellite vendors within Pennsylvania should make a concerted effort to wire/equip all schools, with a particular emphasis on those considered rural.

RECOMMENDATION 14. All schools should be able to participate in Pennsylvania's instructional television program without having to pay per-student membership fees.

RURAL SCHOOL ISSUES

RECOMMENDATION 15. Higher education should provide instruction designed to inform prospective and in-service teachers about distance learning, including what it is, what programs are currently available, what technologies are being used and how they function, how student achievement can be tested, and what pedagogies are needed in order to use distance learning effectively and efficiently.

RECOMMENDATION 16. Higher education should make courses available to teachers and administrators who are seeking certification, degrees, and professional development through the use of distance learning technologies.

APPENDICES

PROGRAM RESOURCES

FUNDING RESOURCES

PROGRAM RESOURCES

Audiographics Programming

The Pennsylvania Teleteaching Project
Riverview Intermediate Unit
880 Greencrest Drive
Shippenville, PA 16254
814-226-7103 or 800-672-7123
(A U.S. Department of Education FIRST project)

The Pennsylvania Teleteaching Project uses computer and audio programming delivered over telephone lines to offer students a highly interactive means of distance learning.

Courses available:

- Pascal
- Computer Processing
- Physics
- Calculus
- Remedial Health
- SAT Math
- Tells Math
- Computer Assisted Drafting
- Chapter I Reading
- French II
- Spanish
- Gifted Studies
- Language Arts
- Advanced English
- Advanced Psysics
- Teleteaching For Teachers
- Social Skills
- Social Psychology
- SAT English

PA Teleteaching Courses can be delivered within the following organizational levels:

- Elementary
- Secondary
- Vocational Technical
- College/University
- Public
- Private
- Correction Institution

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Cable Alliance for Education
Cable in the Classroom
1900 N. Beauregard Street
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Alexandria, VA 22311
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- Mind Extension University
- The Monitor Channel
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- VISN Network
- The Weather Channel
- X*PRESS* X*Change

The following is a description of some of the cable channels that are part of the nonprofit "Cable Alliance for Education's Cable in the Classroom" project.

Arts & Entertainment Network
A&E Classroom
P.O. Box 1610
Grand Central Station
New York, NY 10163-1610
212-661-4500

A&E Classroom is an hour of commercial free programming weekday mornings intended for videotaping. Segments can be used to supplement established curriculum.

Black Entertainment Television
1232 31st Street NW
Washington, DC 20007
202-408-5480

BET's programming is dedicated to black culture, events, entertainment, and issues.

C-Span in the Classroom
400 North Capitol Street, NW
Washington, DC 20001
202-737-3220 or 800-523-7586
(Privately funded to serve the public by America's Cable Television companies)

C-Span in the Classroom is a free educational service created by the cable television network to assist teachers who use C-Span's programming as a teaching resource tool. Programming includes coverage of the U.S. House of Representatives and U.S. Senate, congressional hearings, press conferences, call-in programs, international governments in action, and other policy events without editing, commercials, or commentary.

Schools registered with C-Span are granted full off-air taping rights to educators for classroom use only.

CNN Newsroom (nonprofit)
10 N. Main Street
Yardley, PA 19067
800-344-6219

CNN Newsroom is a fifteen minute, commercial free, cable-delivered news program offered free of charge to middle and secondary schools. The program changes each day. "Future Desk", "International Desk", "Business Desk", "Science Desk", "Editor's Desk" are each aired once a week.

A daily classroom guide is also available through several delivery systems.

MCI Mail can deliver the guide through on-line telecommunications or fax machine. For more information, call 800-388-4128.

X*PRESS/X*CHANGE is an extensive, cable-delivered service. For more information, call 800-772-6397. (see entry for more details)

GTE Education Services can be used to download program guide. For more information, call 800-927-3000.

PennLink/DOE: Pennsylvania residents can receive the program guide through the State Department of Education's PennLink. For more information see entry under the State Library of Pennsylvania or call 717-787-1831.

To receive off-cable taping right, request a School Enrollment and Licensing Form from CNN Newsroom. Once the form is completed and mailed, off-air taping rights are immediately granted. There is no fee for this license.

CNN presents Democracy in America
Turner Educational Services, Inc.
One CNN Center, Box 105366
Atlanta, GA 30348-5366
800-742-1096
(Supported in part by the Markle Foundation)

Democracy in America is an extensive package of educational programming supported by printed teaching materials available free of charge to participating schools. It will provide coverage of all election events plus specials pertaining to our democratic process. Taping rights can be obtained by calling the toll free number above.

CNBC
2200 Fletcher Avenue
Fort Lee, NJ 07024
201-585-6474

The Discovery Channel: Assignment Discovery
10 N. Main Street
Yardley, PA 19067
800-321-1832

ESPN: The Total Sports Network
ESPN Plaza
Bristol, CT 06010
203-585-2357

The Family Channel
1000 Centerville Turnpike
Virginia Beach, VA 23463
804-523-7301

The Learning Channel
1525 Wilson Boulevard
Suite 550
Rosslyn, VA 22209
800-346-0032

The Learning Channel is also affiliated with the Discovery Channel and offers 24-hour educational programming including telecourses without commercial interruptions. Subjects covered:

- Art
- History
- Culture
- English
- Mathematics
- News/Information
- Guidance/College Prep.
- Science
- Life Skills/Health Education
- Language Arts
- Foreign Language

Lifetime Television
36-12 35th Avenue
Astoria, NY 11106
718-482-4127
Programming for and about women

Mind Extension University
The Education Network
9697 East Mineral Avenue
P.O. Box 3309
Englewood, CO 80155-3309
303-792-3111 or 800-777-MIND

Mind Extension University provides courses at an undergraduate and master's degree level delivered primarily by cable. Classes can also be received by satellite or videotapes.

Nickelodeon
1515 Broadway
New York, NY 10036
212-258-7500
Children's programming

Showtime
1633 Broadway
New York, NY 10019
212-708-1579
Premium cable channel offering some educational and entertainment programming for children

The Weather Channel
2600 Cumberland Parkway
Atlanta, GA 30339
404-434-6800

X*PRESS X*CHANGE
X*PRESS Information Services, Ltd.
4643 South Ulster Street, Suite 340
Denver, CO 80237
303-721-5412

X*PRESS X*CHANGE is a 24-hour computer information service which includes national and international news, regional and state weather reports, sports scores and schedules, shopping, lifestyle trends and entertainment news. It can also be used to track stocks and receive public domain software.

X*PRESS is delivered by cable to personal computers. Delivers daily video taping schedules of Cable in the Classroom programmer and The Weather Channel lesson plans.

X*PRESS Media Center can be accessed by MacIntosh users featuring a catalog of interactive programming.

The following channels are available through Education Satellite Network or through the programmer directly. Cable channels not affiliated with "Cable in the Classroom".

Consumer News and Business Channel
2200 Fletcher Avenue
Fort Lee, NJ 07024
201-585-6469

Nostalgia Television
125 E. John Carpenter Freeway
Suite 670
Irving, TX 75062
214-506-7300
Programming includes classic movies & retrospective of historical events.

The PENNARAMA Channel
Pennsylvania Cable Network
Pennsylvania State University
203 Wagner Annex
University Park, PA 16802
814-863-0023
Adult Education Courses

PENNARAMA is a cable television service for Pennsylvania. It is managed by WPSX-TV, The Pennsylvania State University, which shares services and facilities with it.

PENNARAMA is designed to help individuals obtain/possess further education, occupational qualifications, or vocational interests. Programming varies from GED and college courses, world events, and entertainment.

The Silent Network
P.O. Box 1902
Beverly Hills, CA 90213
213-654-6972
Specialized programming for the deaf and hearing impaired with open captions.

Univision
9200 Sunset Boulevard
Los Angeles, CA 90069
213-281-2475
Spanish language programming

Computer On-Line Information Networks

Learning Link
Operated by Pennsylvania Public Television Network
Box 397
Hershey, PA 17033
717-533-3548
Funded by The Corporation for Public Broadcasting (CPB)

Learning Link's purpose is to deliver information and to foster communication between education professionals. It offers nine basic services:

Schedule Information	Electronic Mail	Surveys
Resource Databases	Discussions	Bulletin Boards
Gateways	File Libraries	Forums

Once registered with Learning Link, there is no fee for using the service. However, some on-line services available through Gateways may require an additional registration and/or user fee.

NASA Spacelink
Educational Technology Branch
NASA Headquarters
Code XET
Washington, DC 20544
205-895-0028

This database of information and educational materials is accessible by 300, 1200, or 2400 baud modem. Spacelink contains news, history of pre-shuttle programs, a listing of all NASA educational services, reports on how NASA research has impacted everyday life, and more. The only cost is for long distance charges.

National Distance Learning Center - Established by the United States Distance Learning Association
The Clearinghouse for Distance Learning
Owensboro Community College
4800 New Hartford Road
Owensboro, KY 42323-9990

The NDLC is a centralized, detailed electronic information source of current distance learning materials. Users can access information and producers can post their course listings. Costs are for long distance charges only. If you have communications software and modem, you can call NDLC directly. Users: call 502-686-4555. Producers: Contact NDLC by voice phone at 502-686-4556 to register, receive your user name and password necessary for system security. The NDLC can supply communications software with installation instructions and a user's guide. Generic software can be used. Callers set their communications software for no parity, 8 data bits, 1 stop bit. Connections are supported up to 2400 baud.

Foundation-Supported Programming

The Annenberg/CPB Math and Science Project
901 E. Street, NW
Washington DC 20004
202-879-9658

The Annenberg Foundation and CPB (Corporation for Public Broadcasting) have announced a new 12-year, $60 million initiative to improve math and science education in elementary and secondary schools using information and telecommunications technologies. Guidelines for funding can be obtained from the above address.

Instructional Support Centers

Eastern Instructional Support Center
200 Anderson Road
King of Prussia, PA 19406
215-265-7321 or 800-441-3215

Mid State Instructional Support Center
150 South Progress Avenue
Harrisburg, PA 17109
717-657-5840 or 800-223-7372

Western Instructional Support Center
5346 William Flynn Highway, Route 8
Gibsonia, PA 15044
412-443-7821, 412-961-0294
800-446-5607
This center is the expert on distance learning for intermediate units in Pennsylvania.

Public Television

The Corporation for Public Broadcasting
901 E. Street, NW
Washington, DC 20004

Educational activities include:

Project Education is a television-radio outreach initiative to help communities form coalitions among public broadcasting, education, and business and achieve the national education goals.

The Teacher Training Institute (TTI) uses instructional television to enhance science teaching.

Extending the Neighborhood to Child Care: a project to determine how the series, Mr. Roger's Neighborhood, could be incorporated into a child care curriculum.

Talk of the Nation: a nationwide call-in program broadcast over public radio.

CPB is working with the New American Schools Development Corporation in selecting design teams to create a new generation of American schools which will enable students to compete in a global environment.

Elementary and Secondary Service (ESS)
Public Broadcasting Service
1320 Braddock Place
Alexandria, VA 22314
703-739-5038

Contact the Learning Services Director at your local PBS station (see below). ESS provides programming that teaches basic learning skills from grades preschool to high school. It helps give early learners a head start and dropouts a second chance.

Pennsylvania Public Television Network
Box 397
Hershey, PA 17033
717-533-3548

The Pennsylvania Public Television Network provides programming for distance education through seven public television stations around the state. Contact the station that services your area.

WHYY-TV Philadelphia
WQLN-TV Erie
WQED-TV Pittsburgh
WITF-TV Harrisburg
WPSX-TV University Park
WLVT-TV Allentown/Bethlehem
WVIA-TV Scranton

Satellite Programming

Adult Learning Satellite Service
Public Broadcasting Service
1320 Braddock Place
Alexandria, VA 22314-1698
703-739-5038

The Adult Learning Satellite Service delivers a broad range of educational programming via satellite. A percentage of ALSS's income is returned to the educational outreach departments of local public television stations.

The Business Channel, a division of ALSS, offers business and economic programming. Many of the programs delivered on this channel were originally available only to corporations.

ALSS programs include:

> Telecourses which can be offered as comprehensive college-credit courses for distance learners. Subject matter covers a wide range of topics.
>
> Audiovisual resource programs including some of PBS's finest prime-time programs, which can be used as supplementary learning resources for classes and libraries.
>
> Live interactive video conferences give organizations the opportunity to host local conferences featuring national experts on the most pressing issues facing education, business, health, and other fields.

The Adult Learning Satellite Service and The Business Channel transmissions are private communications between PBS and licensed organizations. Association costs for both ALSS and TBC for one year are $1500.00.

Association costs for The Business Channel are only $500.00. ALSS also offers a College by Cassette option allowing the start up of a telecourse without a large monetary investment (enrollment is $40.00 per student). For more information, call 800-257-2578.

Agency for Instructional Technology (AIT)
Box A, 1111 W. 17th Street
Bloomington, IN 47402-0120
800-457-4509 or 812-339-2203

AIT is a nonprofit U.S./Canadian organization providing leadership and service through development, acquisition, and distribution of technology-based instructional materials. AIT is delivered by satellite in the U.S. and Canada to noncommercial and instructional television stations (PBS and NISS, for example). Products available through the AIT catalog include video programming, computer software, interactive videodiscs, plus the supporting print materials.

Programming covers grades pre-kindergarten through 12th grade and adult education in all curriculum areas plus career development, early childhood, guidance/mental health, staff development, and vocational education. AIT also has programming available for and about special needs' students. These include Sexual Abuse Prevention for Children with Physical Handicaps and Visual Arts for the Physically Challenged Person.

Arts and Sciences Teleconferencing Service (ASTS)
Oklahoma State University
401 Life Sciences East
Stillwater, OK 74078-0276
800-452-2787 FAX: 405-744-7201

ASTS is a satellite-delivered instruction service providing live, interactive secondary school courses with the primary goal of providing equal access to educational opportunities. It has developed a distinctive model for its distance learning courses. Each course is taught through a live, interactive broadcast 2-3 times a week, including high technology graphics and demonstrations. On the alternate days, the on-site instructor or "Teaching Partner" supervises exercises, gives quizzes and tests, and reinforces material taught by the ASTS instructor.

All courses have 24-hour access to the professor and staff, including 8-12 hours of personal access each day. Students can also network with other ASTS students around the country. Courses offered by ASTS include:

German I & II
Russian I & II
AP Physics
AP Chemistry
Applied Economics
Basic English and Reading
ACT prep course
PSAT/NMSQT/SAT prep course
AP Calculus
AP American Government
Trigonometry/Analytic Geometry

Central Educational Telecommunications Network (CETN)

Managed by the Black College Satellite Network (BCSN)
500 North Capital Street, NW, Suite 801
Washington, DC 20001
202-737-2405

CETN provides programs and services to urban, suburban, and rural local education agencies using such state-of-the-art telecommunication technologies as satellite, cable, fiber-optic and digital compression transmissions. CETN provides high quality interactive telecourses for grades K-12 and staff development workshops. All courses are produced by historically Black Colleges and Universities and taught by master teachers.

Deep Dish TV Network
339 Lafayette Street
New York, NY 10012
212-473-8933

This network links community producers, programmers, and media activists who support the idea of a progressive TV network. Programming includes public policy issues, the activities of grass-roots movements, and alternative arts and culture features.

Emergency Education Network (EENET)
Emmitsburg, MD 21727
301-447-1068

This network offers community service videoconferencing. These conferences can be used to promote partnerships between school and community. An extensive collection of previously recorded programs are available from:

Technical Resources, Inc.
3202 Tower Oaks Boulevard #200
Rockville, MD 20852
301-231-5250

ESN: Educational Satellite Network
Missouri School Boards Association
2100 I-70 Drive, SW
Columbia, MO 65203
800-243-MSBA/314-445-9920
(funded by Federal Star Schools Program)

ESN offers a unique learning resource to school districts by providing enhancement and enrichment programming, in-service and staff development programs, and instructional courses for credit. ESN produces its own programming and serves as a program broker for other instructional programming. These sources include:

The Discovery Channel
The Silent Network
CNB
The Nostalgia Channel
FRANCE-TV
SCOLA
The Learning Channel
Univision
C-Span
Black Entertainment Television

ETN: Educational Telecommunications Network
Educational Materials Development Center
Room 260
Los Angeles County Office of Education
9300 Imperial Highway
Downey, CA 90242-2890
310-922-6668

ETN offers television programming for administrators, teachers, students, and parents. Programs in staff development, adult education, and student learning are delivered via Ku-Band satellite. To subscribe to ETN, send a letter of intent on requesting agency letterhead. Identify the level (i.e., state, county, consortium, school, district). State that your agency wishes to join ETN and request a contract issued to that effect. Membership includes access to ETN staff development programs, parent programs, and TEAMS distance learning programs.
ETN programs include:

TEAMS: Telecommunications Education for Advances in Mathematics and Science (Previously funded for two years by the Department of Education Star Schools Program, and now funded by the Los Angeles County Office of Education).

TEAMS programs focus on math and science courses for students, with extensive support for teachers. It also incorporates a component for parents, helping them to understand the material their children are learning and to reinforce support of education at home.

ABCD: The Academy for Business Career Development is a training and development program for classified staff in school districts. Participation in these programs is on a fee basis and requires prior registration.

The Adult Learning Channel is an extensive continuing education channel for teachers. It is available as part of the ESN membership.

The ESN Parent Channel (Home-School Connection Series) transmits programs for parents. These educational programs are broadcast on the first and third Tuesday of each month and in both English and Spanish.

The Parent Channel helps address important parental needs and assists schools in the development of a meaningful home-school connection. Programming includes, but is not limited to:

- Parents Teach Too!
- Improving Self-esteem
- School Readiness
- Gang Prevention
- Postponing Preteen Sexual Involvement
- Parent-Teen Communication Skills
- Career Choices for Your Child

FRANCE TV Magazine
French language programming
For Satellite information: 800-257-2578
For Videocassette information: 800-992-3788

Louisiana Educational Resource Network
Southern Louisiana University
Shreveport Metro Center
610 Texas Street
Shreveport, LA 71101
318-674-3444 or 318-674-3358

Mass LearnPike MCET
Massachusetts Corporation For Educational Telecommunications
38 Sidney Street, Suite 300
Cambridge, MA 02139
617-621-0290 FAX 617-621-0291

Program: Reach for the Stars is designed to improve science teaching in middle schools.

NASA: National Aeronautics and Space Administration
NASA Education Videoconference Series for Educators
Educational Service Project
300 North Cardell
Oklahoma State University
Stillwater, OK 74078-0422

This is NASA's primary involvement in distance learning. The videoconference series features researchers and other space experts, which can be received through C-band satellite transmission. Site registration is free.

NISS: National Instructional (TV) Satellite Schedule
Administered by Southern Educational Communications Association (SECA)
P.O. Box 50008
Columbia, SC 29250

The National ITV Satellite Schedule is a national distributor of educational programming delivering 124 instructional series during their schedule year. Programs span a variety of topics and are produced by AIT, TVO, PBS, as well as others.

NISS is a subscription satellite delivery service administered by SECA. To use this service, agencies must be authorized by SECA and must have acquired use rights for the programming from the copyright holder or the series distributor representative (NISS).

Authorization and administration questions should be directed to:
Project Director 803-799-5517

Scheduling and transmission questions should be directed to:
SECA 803 799-5517

SCISTAR: Interactive Satellite Television
Talcott Mountain Science Center for Student Involvement, Inc.
Montivideo Road
Avon, CT 06001
203-677-8571

SCISTAR has two specific programs it presents to students:

On the Shoulders of Giants: This series of ten-minute satellite broadcasts throughout the school year brings experts in science and technology into the classroom. The programs are interactive because students can call the presenter directly with questions.

The National Student Weather Network: This hands-on program allows students computer access to the same up-to-the-minute weather information used by meteorologists. The NSWN program includes:

Accu-Weather Forecaster computer software and curriculum guides

Full rights to view, videotape, and call-in to our annual series of satellite and cable video broadcasts

A complete set of weather instruments for local weather observations, along with printed materials for hands-on exploration

Use of telecommunications to share local observations with other schools in the network

Ongoing support and communications in support of the weather activities in the school

SCOLA
2500 California Street
Omaha, NE 68178-0778
402-280-4063

SCOLA is a satellite-based news service (also available to cable systems) that provides foreign TV news programming in 20 languages from 30 countries to schools nationwide, 24 hours a day, 7 days a week. An affiliation fee must be paid to SCOLA upon subscribing. The fee is assessed differently depending on whether the suscriber is a school district, cable system, or business.

SCOLA also provides an Outwrite service. Outwrite consists of a transcript of 5-10 minutes of original language text, the English translation, vocabulary, glossaries of important terms, discussion topics, and a quiz in both languages. Costs of Outwrite per semester, per foreign language vary from $80 to $200.

Satellite Educational Resources Consortium (SERC)
P.O. Box 50008
Columbia, SC 29250
SERC Hotline: 800-476-5001

Staff Development Programming

The SERC Staff Development package consists of twenty different offerings totalling 127 hours of programming.

School Site Purchase: A school may participate in individual SERC offerings on a per-contract-hour fee or purchase the entire package. Both options provide for unlimited enrollment at one site only.

Student Instructional Programming

SERC also offers live, interactive classroom instruction via satellite in the following subjects:

Japanese I & II	Russian I & II
AP Economics: Microeconomics	AP Economics: Macroeconomics
Discrete Math	Probability and Statistics
World Geography: Honors	Physics

For more information about SERC, contact the above address or, in Pennsylvania, School Library Media Advisor, State Library of Pennsylvania, 717-783-4413.

TI-IN
Educational Consultant
3315 Smith Street
Parkersburg, WV 26104
304-428-1710 or 800-999-8446

TI-IN Network offers programming in seven different areas including direct student instruction, staff development, student enrichment, student test reviews, special programs, subscriber training, and CNN Newsroom (See Cable Programming section). Subscribers can receive TI-IN via Ku-band satellite system, C-band satellite system or cable television.

Software Programs

NASA: National Aeronautics and Space Administration
Educational Technology Branch
NASA Headquarters
Code XET
Washington, DC 20544

This branch of NASA publishes the catalog Software for Aerospace Education which lists privately produced software and videodiscs on astronomy and space exploration.

Videocassette Programming

The Annenberg/CPB Project: Higher Education Within Reach
901 E.Street, NW
Washington, DC 20004

The Annenberg/CPB Project offers video and audio instruction at the undergraduate college level.

This project offers quality teaching and learning materials that offer "nontraditional" college students the flexibility to participate in baccalaureate degree programs.

FRANCE TV Magazine
French language programming
For Satellite information: 800-257-2578
For Videocassette information: 800-992-3788

Great Plains National Network
University of Nebraska
Lincoln, Nebraska
800-228-4630
Distributor and clearinghouse of videotaped programming

Modern Satellite Services
Modem Talking Pictures Services
5000 Park Street, North
St. Petersburg, FL 33709
813-541-7571
Cost: Free
Distributor and clearinghouse of videotaped programming

TV Ontario (TVO)
1140 Kildaire Farm Road
Suite 308
Cary, NC 27511
919-380-0747 or 800-331-9566
FAX 919-380-0961

TV Ontario programs are designed to be integrated into an elementary or secondary instructional program. Their design and development grow out of classroom use and the real needs of teachers and students.

Subject areas include:

- Arts
- Business Education
- Career Education
- Child Development
- Computer Studies
- French Language
- Geography
- Adult Education
- Guidance
- Health, Safety, and Fitness
- Home Economics
- Language Arts
- Mathematics
- Science, Technology, and the Environment
- Social Studies
- Teacher Development
- Students At-Risk

Broadcast rights and off-air record rights for TV Ontario ITV series may be purchased for school use. Duplication/distribution rights can be obtained by calling 800-331-9566.

TVO has also put five senior math and science programs on videodisc offering high quality that is virtually indestructible. TVO courses are also available through some PBS stations and NISS distribution (See NISS information above).

Consultants on Distance Learning Programming

Pennsylvania Department of Education
State Library of Pennsylvania
Division of School Library Media Services
333 Market Street
Harrisburg, PA 17126-0333
717-783-4413

This contact has extensive information on distance learning programs as well as the following:

Satellite Educational Resources Consortium (SERC) member

PENN*LINK: Electronic information services providing general information, national updates, and teleconferences. Also has a distance learning bulletin board available on PENN*LINK electronic .

State and National Teleconferences: Staff development available for most subject areas.

United States Distance Learning Association
Box 5129
San Ramon, CA 94583
415-820-5845

USDLA Purpose: The United States Distance Learning Association is a nonprofit association and application of distance learning to education and training. Among the constituents served are K through 12, higher education, continuing education, and corporate training.

FUNDING RESOURCES

Corporate Foundation

American Honda Foundation
700 Van Ness Avenue
Torrance, CA 90509-2205
213-781-4829

The Annenberg/CPB Math and Science Project
901 E. Street, NW,
Washington, DC 20004
202-879-9658
The Annenberg Foundation and CPB (Corporation for Public Broadcasting) have announced a new 12-year, $60 million initiative to improve math and science education in elementary and secondary schools using information and telecommunications technologies.

Claude Worthington Benedum Foundation
1400 Benedum-Trees Building
Pittsburgh, PA 15222
412-288-0360

Coca Cola Foundation
404-676-2568
This Foundation gears it funding to problem-solving proposals; for example, using distance education to reduce student dropouts.

The Alfred and Mary Douty Foundation
P.O. Box 540
Plymouth Meeting, PA 19462
215-828-8145
Geographic restrictions: Greater Philadelphia, PA, area with preference to Montgomery and Philadelphia counties.

Exxon Education Foundation
225 East John W. Carpenter Freeway
Irving, TX 75062-2298
214-444-1104
Name of Program: Mathematics, Education Grant, Research, and Training Program

The Ford Foundation
320 East 43rd Street
New York, NY 10017
212-573-5000

GTE Foundation
One Stamford Forum
Stamford, CT 06904
203-965-3620

The Hitachi Foundation
1509 22nd Street, NW
Washington, DC 20037
202-457-0558

The Pew Charitable Trusts
Three Parkway, Suite 501
Philadelphia, PA 19102-1305
215-568-3330

International Business Machines, Corp.
Director of Corporate Support
914-765-1900
IBM is interested in donating equipment and personnel to schools. They are looking for programs addressing the disadvantaged.

The National Foundation for The Improvement of Education (NFIE)
1201 16th Street, NW
Washington, DC 20036
202-822-7840
Programs: Christa McAuliffe Institute for Educational Pioneering Fellowship Program, Dropout Prevention, Capacity-Building grants.

RJR Nabisco Foundation
1455 Pennsylvania Avenue, NW, Suite 550
Washington, DC 20004
202-626-7200

Alfred P. Sloan Foundation
630 Fifth Avenue, 25th Floor
New York, NY 10111-0242
212-649-1649
Programs: Teacher Preparation, Teacher Enhancement, Science and Mathematics Education Networks, Presidential Awards for Excellence in Science and Mathematics Teaching.

Tandy Foundation
Tandy Educational Grants Program
1600 One Tandy Center
Fort Worth, Texas 76102
817-390-3832
FAX 817-390-2774

Texas Instruments
P.O. Box 655474, M/S 232
Dallas, TX 75265
214-917-4505

Cable Television Programming

National Federation of Local Cable Programmers
666 Eleventh Street, NW, Suite 806
Washington, DC 20001
202-393-2650

The Cable Alliance for Education
Cable in the Classroom
1900 N. Beauregard Street, Suite 108
Alexandria, VA 22311
703-845-1400

Arts & Entertainment Network
A&E Classroom
212-210-9725

CNN and Turner Multimedia
CNN Newsroom and Turner Educational Services
800-344-6219

The Discovery Channel
Assignment Discovery
800-321-1832
The Learning Channel
800-346-0032
Educational Services: 800-321-1832

Mind Extension University
800-777-MIND (6463)

The Monitor Channel
The Christian Science Monitor
617-787-6868

Time Warner Communications
75 Rockefeller Plaza
New York, NY 10019
212-484-8000

Comcast Cable Communications, Inc.
1414 South Pennsylvania Square
Philadelphia, PA 19102
215-665-1700

C-SPAN in the Classroom
800-523-7586

X*PRESS X*CHANGE
800-772-6397

U.S. Department of Education Funding

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
Office of Research
555 New Jersey Avenue, NW, Room 610
Washington, DC 20208
202-357-6079

Educational Research and Development Centers

Centers are located around the country and focus on various topics in education. All the centers must release information about their findings to parents, instructors, and other professionals who can use data for educational purposes.

Program Areas: Teaching and Learning, Educational Policy and Organization, Dissemination and Improvement of Practice.

Purpose: To help solve problems of American education through both basic and applied research and development activities.

Center on Adult Literacy, Inc.
University of Pennsylvania
Graduate School of Education
3700 Walnut Street
Philadelphia, PA 19104-6216
215-898-2100

Research for Better Schools
444 North Third Street
Philadelphia, PA 19123-4107
215-574-9300

Center on Education Policy and Student Learning
The Eagleton Institute of Politics
Wood Lawn Neilson Campus
Clifton Avenue
New Brunswick, NJ 08903-0270
908-828-3872

Center on Mathematics Teaching and Learning
University of Wisconsin
Wisconsin Center for Education Research
1025 West Johnson Street
Madison, WI 53706
608-263-4285

Center on Science Teaching and Learning
Ohio State University
249 North High Street
Columbus, OH 43210
614-292-3339

Center for Technology in Education
Bank Street College of Education
610 West 112th Street
New York, NY 10025
212-222-6700

Partnership Programs

Education Partnerships Program
Office of Educational Research and Improvement (OERI)
555 New Jersey Avenue, NW, Room 610
Washington, DC 20208
202-219-2116
Purpose: To encourage the creation of partnerships between public schools or institutions of higher education and the private sector.

Areas of involvement include:

a) Applying resources from private or nonprofit sectors of the community to encourage excellence in education;

b) encouraging businesses to work with educationally disadvantaged and gifted students;

c) applying community resources to improve education;

d) and promoting career awareness through work experiences with the private sector.

Federal, State, and Local Partnerships for Educational Improvement
School Improvement Programs
School Effectiveness Division
State and Local Educational Programs Branch

Office of Elementary and Secondary Education
400 Maryland Avenue, SW
Washington, DC 20202-6439
Purpose: To encourage the creation of partnerships between public schools and institutions of higher education.

School, College, and University Partnerships (SLUP)
Office of Postsecondary Education
400 Maryland Avenue, SW
Washington, DC 20202
202-732-4804
Purpose: To encourage partnerships between institutions of higher education and secondary schools serving low income students, improve academic skills, and chances to obtain higher education.

Technology Funding

Technology Education Demonstration (Technology Education)
Division of National Programs
Office of Vocational and Adult Education
400 Maryland Avenue, SW
Washington, DC 20202-6439
202-732-2428
Purpose: Provide funds to establish programs for technology education in secondary schools, vocational schools, and community colleges.

School Improvement Programs

Fund for the Improvement and Reform of Schools and Teaching (FIRST)
OERI/U.S. Department of Education
555 New Jersey Avenue, NW, Room 522
Washington, DC 20208
202-219-1496
Purpose: To encourage and reward innovative educational projects and reforms for elementary and secondary schools. The following four programs sponsor distance learning projects under this fund:

A) FIRST Programs
Family-School Partnership Program: awards demonstration grants for projects that recognize parents' primary role in their children's education.

The Schools and Teachers Program: awards discretionary grants to individual public and private schools, state and local education agencies, consortia of schools, projects that increase educational opportunities for and performance of students and teachers.

B) The Secretary's Fund for Innovation in Education (FIE)
Computer-Based Instruction: promotes projects in elementary and secondary schools that expand the use of the computer in education.

Innovation in Education: supports educational reforms and projects that improve performance of underachieving students and foreign language instruction.

Technology Education: assists in the development of material for educational TV, video-based programs, and telecommunications used to improve instruction, especially in the areas of math, science, reading, and foreign languages.

C) Dwight D. Eisenhower Mathematics and Science National Program
This program sponsors projects that are of national importance. Included are projects using new media such as CD-ROM and video discs, teacher training, and educational partnerships.

D) National Program for Mathematics and Science Education
This program provides support for innovative projects of national significance in improving public and private elementary and secondary mathematics and science instruction. Awards in 1990 emphasized demonstration models and the integration of new technologies into math and science education.

Satellite Funding

Star Schools-Title IX Funding
OERI/Program for the Improvement of Practice (PIP)
U.S. Department of Education
555 New Jersey Avenue, NW, Room 502A
Washington, DC 20208-5664
202-219-2200
Grants are made to eligible telecommunications partnerships to develop, construct, and acquire telecommunication audio and video facilities and equipment, to develop and acquire instructional programming, and to obtain technical assistance for this programming.

The following is a list of satellite partnerships that broadcast instruction to schools.

Satellite Educational Resources Consortium (SERC)
P.O. Box 50008
Columbia, SC 29250
803-799-5517

TI-IN United Star Schools
1000 Central Parkway, North
San Antonio, TX 78232
512-490-3900

Technical Education Research Center (TERC)
2067 Massachusetts Avenue
Cambridge, MA 02140
617-547-0430

Other Program Funding

U.S. Department of Education/Division of Student Services
400 Maryland Avenue, SW
Washington, DC 20202
202-732-4804

U.S. Department of Education/Division of Adult Education
400 Maryland Avenue, SW
MES Building, Room 4428
Washington, DC 20202-5515
202-732-2270

Programs: Adult Education State-Administered Program, Adult Education Discretionary Programs

Program Areas: Adult Basic Education, basic literacy skills, English as a second language, adult secondary education.

Purpose: To provide educational opportunities to educationally disadvantaged adults.

Other Federal Agencies

1. National Science Foundation
   Division of Teacher Preparation and Enhancement
   Directorate for Science and Engineering Education
   1800 G Street, NW
   Washington, DC 20550
   202-357-7073
   Considers proposals in eight different divisions of science, including social sciences. Eager to fund projects that combine new technology and education.

2. National Telecommunications and Information Administration (NTIA)
   U.S. Department of Commerce
   Washington, DC 20230

   NTIA/Public Telecommunications Facilities Program (PTFP)
   U.S. Department of Commerce, Room 4625
   14th Street and Constitution Avenue, NW
   Washington, DC 20230
   202-377-5802
   Broadcast Instruction: Grants are awarded to local public broadcasting television and radio stations which provide educational services as part of their programming.

   Nonbroadcast Instruction: Supports satellite transmission of educational programming. Awards grants to establish local instruction television networks, usually involving microwave Instructional Television Fixed Service (ITFS).

3. National Aeronautics and Space Administration (NASA)
   Educational Technology Branch
   NASA Headquarters
   Washington, DC 20554
   Does not fund new projects but is open to proposals. Publishes a catalog, Software for Aerospace Education, that lists privately produced videodiscs and software on astronomy and space exploration.

   NASA Video - Conference Series for Educators Broadcasts, conferences with scientific experts on various topics by satellite. For site registration at no charge write:

   NASA Aerospace Education Service Project
   Video Conference Site Registration
   300 North Cordell
   Oklahoma State University
   Stillwater, OK 74078-0422

Schools without satellites can order conferences on videocassette from:

NASA CORE/Lorain County JVS
15181 Route 58, South
Oberlin, OH 44074
216-774-1051, ext. 293

NASA Spacelink 205-895-0028
Free service to users of a 300, 1200, or 2400 baud modem (users pay only long distance fees). It provides information and educational materials on current NASA news, history, and plans for the future. It also lists all educational services available to the public.

Teacher Resource Centers

NASA maintains collections of video, laser disks, and other materials for classroom use. The Pennsylvania teacher may utilize the center below:

NASA Goddard Space Flight Center
Attn: Teacher Resource Laboratory
Mail Stop: CS-130
Greenbelt, MD 20771
301-344-8981

4. National Endowment for the Humanities (NEH)
   1100 Pennsylvania Avenue
   Washington, DC 20506
   202-786-0435 202-786-0438 (Guidelines)
   Program: Elementary and Secondary Education in the Humanities
   202-786-0377

5. National Endowment for the Arts (NEA)
   The Nancy Hanks Center
   1100 Pennsylvania Avenue
   Washington, DC 20506
   202-682-5797
   Programs: Arts in Education Program
   Media Arts: Film/Radio/Television

   The following publications are available from NEA Public Information Office:

   1. The National Endowment for the Arts Guide to Programs

   2. Arts in Education: Art Education Partnership Grants Guidelines

   3. Media Arts Guidelines

Telephone Companies and Foundations

Bell of Pennsylvania
One Parkway
9th Floor-A
Philadelphia, PA 19102
215-466-2257
Contact: Director, Corporate Giving

Bell Atlantic Corporation
1600 Market Street
Philadelphia, PA 19103
215-963-6092

Bell Atlantic Charitable Foundation
1310 North Courthouse Road
Arlington, VA 22201
202-392-1563

These companies and foundations limit their giving to the Atlantic region and Pennsylvania in particular. They fund installation of fiber-optic systems, modems, literacy, math, and science instruction.

Consultation Services

Epler Enterprises, Inc.
P.O. Box 13
Hummelstown, PA 17036
717-566-8620
Educational and library consulting, responsible for directing Pennsylvania distance education learning programs, school library media programs, and instructional television programs.

Pennsylvania Department of Education
State Library of Pennsylvania
333 Market Street
Harrisburg, PA 17126-0333
717-783-4413
This contact has extensive information on distance learning programs as well as the following: Satellite Educational Resources Consortium (SERC), PENN*LINK, State and National Teleconferences.

United States Distance Learning Association
Box 5129
San Ramon, CA 94583
415-820-5845
USDLA Purpose: The United States Distance Learning Association is a nonprofit association and application of distance learning to education and training. Among the constituents we serve: K through 12, higher education, continuing education, and corporate trainlng.

Funding Source Book

Guide to Computer Grants and Equipment
Datatel (1992)
4375 Fair Lakes Court
Fairfax, VA 22033
703-968-9000
This book conveniently lists all corporate giving programs and foundations that donate money and/or computer equipment to various organizations. It can be obtained by contacting Datatel.

The Center for Rural Pennsylvania
212 Locust Street, Suite 604
Harrisburg, PA 17101

Telephone (717) 787-9555
Fax (717) 772-3587